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COMMENTS

Dear Liana:

Further to our telephone conversation, I enclose a copy of the Petition to Make Special. If you need anything further, please let me know.

Kathleen Perry
Adams Patent & Trademark Office

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re patent application of:	Bernard RUCHET
Assignee:	EXFO Electro-Optical Engineering Inc.
Serial No.	International Patent Application PCT/CA 04/001552 (Request for national entry submitted herewith)
International filing date:	August 23, 2004
Title:	Method and Apparatus for Testing Optical Networks
Examiner:	Not known Art Unit: Not known

THE COMMISSIONER OF PATENTS AND TRADEMARKS
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PETITION TO MAKE SPECIAL UNDER 37 CFR 1.102(d)

Sir:

A Request for entry of the above-identified international patent application number PCT/CA 04/001552 into the national phase is submitted herewith.

The applicant hereby petitions for the resulting national patent application to be **made special** and subjected to accelerated examination on the grounds that:

A. There is an infringing device actually on the market.

B. A rigid comparison has been made between the alleged infringing device and the claims of the above-identified application and, in the opinion of the undersigned, some of the claims are unquestionably infringed.

A comparison of the alleged infringing article with claims 1 to 4 of the application, as amended, is set out below, followed by the required Statement pursuant to M.P.E.P. 708.02.

Please deduct the required Petition fee of $130.00 under 37 C.F.R. 1.17(h) from deposit account number 20-0771. Although this amount is believed to be correct, if it is not, please deduct the correct amount and notify the undersigned accordingly.

COMPARISON OF THE ALLEGED INFRINGING DEVICE WITH THE CLAIMS OF THE ABOVE-IDENTIFIED APPLICATION

Submitted herewith the following documents:

Appendix I is a copy of a manual for a Triplex Power Meter by LiComm Co., Ltd.

Appendix II is a view of the exterior of such a Triplex Power Meter model TPM-5SH.

Appendix III is a first view of the interior of the Triplex Power Meter model TPM-5SH with certain components labelled.

Appendix IV is a second view of the interior of the Triplex Power Meter model TPM-5SH with certain components labelled.

Appendix V is a schematic diagram of the configuration of the relevant components of the Triplex Power Meter model TPM-5SH labelled with the reference numbers used for corresponding components shown in Figures 1, 2 and 3 of the present application.

Claim 1 to 8 of the present application, as amended by the Preliminary Amendment submitted herewith, are reproduced below, clause by clause, with intercalated comments identifying corresponding components of the Triplex Power Meter.

1. Portable apparatus for measuring parameters of optical signals propagating concurrently in opposite directions in an optical transmission path (16, 16/1,..., 16/9) between two elements (10, 14/1...14/9), at least one (14/1...14/9) of the elements being operative to transmit a first optical signal (S1) only if it continues to receive a second optical signal (S2) from the other (10) of said elements, the instrument comprising first and second connector means (22, 24) for connecting the instrument into the optical transmission path in series therewith,

Pages 7 and 10 of the manual (Appendix I) indicate that the connectors OLT (SC/APC) and ONT (SC/APC) of the Triplex Power Meter are connected between an OLT and an ONT of a passive optical network and the meter "simultaneously measures powers of triple wavelengths (1310nm, 1490nm and 1550nm) using the function of signal pass-through between OLT (1490nm, 1550nm) port and ONT (310nm) (*sic*) port in PON system." As explained in the present applicant's specification (page 1, line 31 to page 2, line 2), in such PON systems there is no 1310-nm transmission from the ONT when the fiber link is disconnected, thereby preventing reception of the 1490-nm downstream-data signal from the OLT.

"Pass-through" allows propagation of all three signals through the instrument while they are being measured simultaneously.

and means (32, 38, 46) connected between the first and second connector means for propagating at least said second optical signal (S2) towards said at least one (14) of the elements,

In the Triplex Power Meter, the coupler unit (32) is connected between the connectors and allows at least the second signal S2 (1490nm) to pass towards the ONT.

and measuring said parameters of said concurrently propagating optical signals (S1, S2).

In the Triplex Power Meter, detectors D1310 (38), D1490 (42) and D1550 (44) connected to processing circuitry allow such parameters to be measured for all three signals (1310nm, 1490nm, 1550nm) simultaneously (see manual page 10).

Accordingly, claim 1 is infringed.

Claim 2 reads as follows:

2. Apparatus according to claim 1, wherein the propagating and measuring means (32, 38, 46) provides an optical signal path between the first and second connector means (22, 24) for conveying at least a portion of said second optical signal (S2).

Claim 2 is infringed because the Triplex Power Meter provides an optical path (couplers and fibers) between the first and second connector means.

Claim 3 reads as follows:

3. Apparatus according to claim 2, wherein the propagating and measuring means (32, 38, 46) comprises:

coupler means (32) having first and second ports (28, 30) connected to the first and second connector means (22, 24), respectively, to provide said optical signal path to convey said first (S1) and second (S2) optical signals in opposite directions between said first and second connector means (22, 24), and a third port (34) for supplying a portion (S1') of said first optical signal (S1),

detection means (38; 38, 42; 38, 42, 44) for converting at least the first optical signal portion (S1') into a corresponding electrical signal, and

measuring means (46) for processing the electrical signal to provide an indication of said measured parameters.

Claim 3 is infringed because the Triplex Power Meter has two couplers in tandem (*coupler means*) having two ports connected to the connectors (22,24) and a third port connected to detector D1310 (38).

Claim 4 reads as follows:

4. Apparatus according to claim 3, wherein the coupler means (32) has a fourth port (36) for supplying a portion (S2') of said second optical signal (S2), the detection means (38; 38, 42; 38, 42, 44) also converting at least part of the second optical signal portion (S2") into a corresponding second electrical signal, and the measuring means (46) processing both of the electrical signals to provide desired measurement values of parameters for each of the counter-propagating signals.

Claim 4 is infringed because the coupler means in the Triplex Power Meter also has a fourth port for supplying the second (1490nm) optical signal to detector D1490 (42).

Claim 5 reads as follows:

> *5. Apparatus according to claim 1, wherein, where said one of the elements (14/1,..., 14/9) also receives via said optical transmission path a third optical signal (S3) at a different wavelength from that of said second optical signal (S2), the propagating and measuring means (46) further comprises means (40, 44, 52, 58; 44, 58,68) for measuring parameters of the third optical signal (S3).*

Claim 5 is infringed because the Triplex Power Meter has a detector D1550 (44) which detects the 1550nm signal (S3).

Claim 7 reads as follows:

> *7. Apparatus according to claim 4, wherein, where said one of the elements (14/1,..., 14/9) also normally receives via the optical transmission path a third optical signal (S3) at a wavelength different from that of said second optical signal (S2), said propagating and measuring means comprises a wavelength discriminator (68) connected to the coupler (32) for separating at least a portion (S2', S3') of the combined second and third optical signals (S2, S3) according to wavelength to obtain corresponding separate portions (S2", S3") and supplying same to said detection means (38, 42, 44).*

Claim 7 is infringed because the Triplex Power Meter has a wavelength discriminator WDM (68) which separates the 1490nm and 1550nm signals according to wavelength.

Claim 8 reads as follows:

> *8. Apparatus according to claim 1, wherein the measuring means comprises a separate detector (38, 42, 44) for each of the measured optical signal portions.*

Claim 8 is infringed because the Triplex Power Meter has separate detectors D1310 and D1490.

It is submitted that the corresponding method claims would be infringed by use of the Triplex Power Meter. For the sake of brevity, such infringement has not been not documented herein but would be provided if required.

STATEMENT PURSUANT TO M.P.E.P. 708.02

The undersigned has caused a careful and thorough search of the prior art to be made. In particular, an International Search has been conducted, and an International Search Report issued, by an International Searching Authority in respect of the above-identified international patent application.

Submitted herewith, as Appendix VI, are (i) a copy of the International Search Report; and (ii) a copy of each of the references cited in it.

The International Search Report cited four documents, namely:

European patent application No. 0786878 - cited as *background only*;

US patents Nos. 6,476,919 and US 6,396,575 and International patent application No. WO01/33746A2 - cited as category "Y" documents in respect of claims 1-5, 9-11, 12-16 and 20-23.

There are fundamental differences between the claimed features of the present invention and the features of the devices disclosed in US patents Nos. 6,476,919 and US 6,396,575 and International patent application No. WO01/33746A2, as detailed in the following paragraphs.

The claims of the present application are directed to a portable instrument for measuring parameters of optical signals propagating concurrently in opposite directions in an optical transmission path (16, 16/1,..., 16/9) between two elements (10, 14/1...14/9). At least one (14/1...14/9) of the elements is operative to transmit a first optical signal (S1) only if it continues to receive a second optical signal (S2) from the other (10) of the two elements.

The portable instrument has:

first and second connector means (22, 24) for connecting the instrument, in series, in an optical transmission path (16, 16/1,..., 16/9) between two the elements (10, 14/1...14/9) and

means (32, 38, 46) connected between the first and second connector means for

propagating at least said second optical signal (S2) towards said at least one (14) of the elements, and

measuring said parameters of the concurrently propagating optical signals (S1, S2).

Such a portable instrument may be used to measure optical signals propagating in a link of a passive optical network, especially a so-called Fiber-To-The-Home (FTTH) optical network.

US6,476,919 discloses a polarization independent reflectometer. Apart from the fact that the present invention is not directed to reflectometers, the reflectometer disclosed in US6,476,919 is not used with optical signals *per se* which propagate in both directions. Rather, a single optical signal propagates in one direction, and portions of this optical signal which have reflected from perturbations/Rayleigh reflection propagate in the opposite direction. In addition, the reflectometer disclosed in US6,476,919 has its own light source (a low coherence source), which supplies white light to the device-under-test (DUT), whereas the device claimed in the present application monitors optical signals already propagating in a link of an optical network, to and from an end customer, and which have discrete wavelengths and are modulated with information content. Following from this distinction, the signals received by the two detectors of the reflectometer disclosed in US6,476,919 have the same spectral content (i.e. wavelength). The signals received by the two detectors of the instrument claimed in the present application, however, have different spectral content because the two optical signals propagating in the two directions have two different wavelengths, respectively.

US6,396,575 discloses an optical cross-connect switch. The only similarities between this switch and the instrument claimed in the present application lie in the components used, such as optical couplers, detectors, and opto-electronic converters, and the fact that certain optical paths allow signals to pass through them bidirectionally. The claims of the present application neither read onto, nor are suggested by, the disclosure of US6,396,575.

WO01/33746A2 discloses an apparatus and method for performing reflectometric measurements downstream in a passive optical network (PON). The apparatus has its own optical source and requires that so-called "polarization markers" be deployed and embedded directly into the PON. The instrument claimed in the present application does not have its own source as it characterizes the optical signals already propagating in a PON while the network is in operation. Indeed, the main object of the invention is to ensure that at least one of the signals continues to be received by the corresponding element so as to avoid the network ceasing to operate. In addition, the device according to the present invention does not require any permanent modification of the network itself.

In view of the foregoing, it is submitted that all claims of record are patentable over the cited documents since the combinations of features recited in the claims of record are neither disclosed nor suggested by the cited documents whether taken individually or in combination.

It is further submitted that at least some of these claims read onto the Triplex Power Meter TPM-5SH by Licomm Co., Ltd.

Accordingly, applicant's interests would be prejudiced if the application were not "made special" and its examination expedited.

Respectfully submitted,

ORIGINAL SIGNED BY
T. ADAMS.

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